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(54) **Method for calling up user-specified information using a mobile telephone**

(57) The present invention describes a method for calling up information by means of a mobile telephone.

The SMS messages of a mobile telephone are used to call up information which is unconnected in time and location with the mobile telephone. To specify the desired information and to define the brief commands the user of the mobile telephone uses data-processing equipment with data lines to the information provider, e.g. Internet connection, by means of which he can deposit query profiles with the information provider. In addition, the query profiles can be produced using a speech computer. The user can call up the dormant query profiles by means of simple brief commands and obtain the required information. The desired information will be reproduced either visually or acoustically via the mobile telephone. The advantages of both communication media are therefore combined with one another in an ideal manner, where the hardware of the mobile telephone and/or its method of operation remain unchanged.

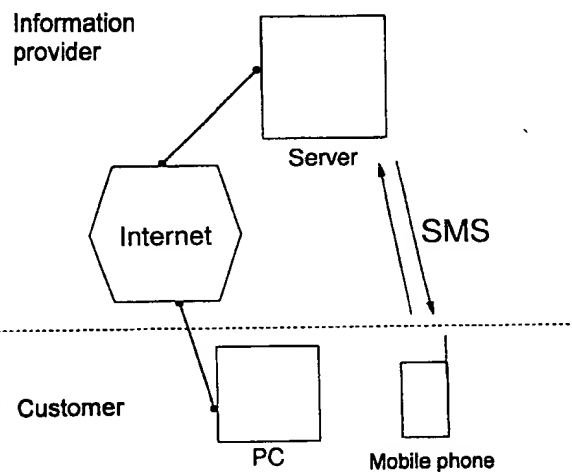


Fig. 1

## Description

[0001] The present invention describes a process for calling up user-specified information, set up with an information provider and which can be called up quickly and simply using SMS messages of a mobile telephone.

[0002] At the present time there are three different methods for calling up information over the mobile phone by SMS:

### Entry of precise parameters

[0003] Here the user must specify exactly the information which he has requested and also authorise it (e.g. PIN). Thus, if he wishes, for example, to query his account status, he must enter his account number, the data required (namely the status of his account) and his PIN. In the case of complex parameters this message can be very long, i.e. the number of keys to be pressed is very large.

### Entry of brief commands

[0004] In this case the user must know a set of possible abbreviated commands. These brief commands are established by the information provider (e.g. bank) and are the same for all users.

[0005] In the example described above, only the command itself is abbreviated. Account number and PIN still need to be entered.

### Individual brief commands

[0006] This method offers the user a very convenient way of calling up his information. For this, however, an individual list of commands must be made available to him by the information provider. In addition, the user must supply his mobile phone number to the information provider. This method can only be handled with difficulty on the part of the information provider since, with a large number of clients, a very large quantity of data has to be produced and managed. In addition, changes by the client (type of information, mobile phone number, etc.) are expensive to carry out.

[0007] Common to these above-mentioned methods is the fact that the user formulates an enquiry with the aid of an SMS message. This message is evaluated by the information provider and the information requested sent to the mobile phone by means of one or more SMS messages. It is a disadvantage of this process that up to 4 keys must be pressed to allow a single letter to be printed.

[0008] European Offenlegungsschrift EP 0731 590 A2 describes a mobile telephone with a key pad with selection and radio keys and a display field, with further keys (soft keys) and optionally integrated transmit/receive devices (handheld) in the operating part.

[0009] One disadvantage of this proposed solution is

that an additional device is required on the mobile phone for processing and sending messages in the sense that received messages to be confirmed with "Yes" are sent back to the sender by operating a soft-key button and a yes input with an additional confirmation. This invention is limited exclusively to YES/NO answers. It does not simplify the sending of complex messages. In addition, this method requires a modification of the mobile phone.

[0010] The method described has either the disadvantage that it requires from the client very detailed and hence long entries or that it requires the client to know what can sometimes be a large set of short commands, which the information provider is able to manage only at very considerable expense.

[0011] The task of the present invention is to make available a new method for calling up user-specified information over a mobile phone which enables complex information to be called up by simple messages over the mobile phone without the necessity that the mobile phone itself be modified, without the need for the user to know any commands predetermined by the information provider and without requiring any additional management expenditure on the part of the information provider.

[0012] This task is solved by the features of Claims 1, 15 and 23. Advantageous embodiments of the present invention are set out in the sub-claims.

[0013] The advantage of the present invention resides in the combination of two different communication media, in order to combine their advantages. The SMS messages are used in order to call up information at any time and in any place using a mobile phone. To specify the desired information and to define the short command the user of the mobile phone employs a data-processing device with a data line, e.g. Internet connection, by means of which an enquiry profile can be laid down with the information provider. In addition, the enquiry profile can be produced by means of a speech computer. The user can call up the recorded enquiry profile by means of a simple short command and obtain the desired information. The desired information is reproduced, either audibly or visually, through the mobile phone. The characteristics of both media are therefore coupled with one another in an ideal manner, where the hardware of the mobile phone and/or its operation remain unaltered.

[0014] The present invention will be illustrated in more detail by means of the drawings, where

FIG. 1 shows the implementation of the present invention in the Internet area and

FIG. 2 shows the architecture in accordance with the invention and its implementation in the banking field.

[0015] The architecture in accordance with the inven-

tion in FIG. 1 consists of the user's mobile phone, the user's data-processing device (PC) with network connection, e.g. Internet connection and the information provider's data-processing device (Server), which is connected with the user's data-processing equipment (Internet).

**[0016]** The user of the mobile phone effects a connection to the information provider's computer through a data-processing device and produces a so-called enquiry profile, which contains the corresponding short command for any information which may be queried, so that he can conveniently obtain this information in future through the mobile phone. The technical implementation whereby the user transfers the query profile to the information provider can take a number of forms. A preferred form of implementation consists in the use of the Internet and/or the Intranet and the methods and techniques established thereon for user interaction, such as, for example, HTML, CGI, JAVA, ActiveX, etc. These techniques enable the producer/user to enter the enquiry profile with the enquiry being made and its short command in a simple fashion and send it to the information provider. These enquiry profiles are managed and/or stored by the information provider. If, at some future time, the user sends one of these short commands to the information provider over his mobile phone by SMS, the latter checks the user's telephone number and the short command sent with the enquiry profile previously produced by the user and sent to the information provider. If they agree, the desired information is sent to the user of the mobile phone by SMS.

**[0017]** A further embodiment of the present invention can also comprise using a "Call centre" instead of the Internet. In this case the user is accompanied through the configuration menu either by a voice computer or even by a person. The enquiry profile is entered by the user either through the telephone keypad or orally.

**[0018]** A further embodiment is the direct dialling of the user of the mobile phone with his modem through the telephone network to the information provider. Since this is only using an alternative means of transmission to the Internet, the comments made in respect of the Internet apply.

**[0019]** In a final embodiment, the user of the mobile phone communicates the enquiry profile to the information provider himself (telephone/fax/letter, etc.) and the information provider stores this information.

**[0020]** FIG. 2 describes the implementation of the present invention in a bank architecture.

**[0021]** The bank architecture consists in essence of an SMS server, connected with one or more systems which prepare the required information. In addition, the SMS server is connected to the Internet. The SMS server has access to a WWW server program through which the customer can draw the JAVA applets and with the aid of which he can define the information to be asked for and its short command. In addition, the SMS server also has access to an SMS program, which man-

ages this information, compares the messages entered with the short commands entered and, if they agree, gathers the desired information with the aid of the attached systems. The sending of this collected information is effected by means of another program, which is installed on the SMS server. The separation of the functions over several programs is of a logical nature and is not a technical requirement and can therefore be solved by the specialist in some other way.

**[0022]** The information can be sent over one of the information provider's mobile phones or the information is sent via a data link from the information provider to the mobile phone network operator who sends the information over the telephone network to the mobile phone user.

**[0023]** The information is usually shown on the display of the mobile phone. However, it is also possible to prepare the information acoustically and send it to the mobile phone user.

**[0024]** In the banking field the method in accordance with the invention can, for example, be employed for the following enquiries:

#### Account balance enquiries

**[0025]** Here the user can define short commands through the Internet by the method shown in FIG. 1, e.g. "KS1 for account balance of account 1 = account No. xy". In addition, he gives the number of the mobile phone from which the enquiry may only be made.

#### Share price, deposit value, deposit yield

**[0026]** Here, the customer can, for example, define short commands via applets which he downloads to his system via the Internet, e.g. "AKI for current market price of the IBM shares". In addition, he provides the number of the mobile phone from which the enquiry can only be made.

**[0027]** On security grounds, a PIN and/or a telephone number can be sent to the information provider together with the call for information. The PIN makes sure that the specified information can be called for only by the authorised user. The inclusion of the telephone number ensures that the enquiry profile set up by the information provider can only be requested from the authorised telephone.

**[0028]** The present invention can be used in almost all areas in which information providers have stored information on persons, things or special relationships, which may be of interest to the user of a mobile phone, e.g. insurance business, traffic information, etc.

**[0029]** The advantage of the present invention lies in the combination of two different communication media, in order to combine their advantages. The SMS messages are used in order to call up information at any place and at any time using a mobile phone. To specify the desired information and to define the short com-

mands the user of the mobile phone employs a data processing device with a data link, e.g. Internet connection, by means of which enquiry profiles can be deposited with the information provider. In addition, the enquiry profiles can also be recorded via a voice computer. The user can call up the deposited enquiry profile by means of simple short commands and obtain the desired information. The desired information is provided either audibly or visually via the mobile phone. The characteristics of the two media are thus coupled in an ideal manner, where the mobile phone hardware and/or its method of operation remain unaltered.

## Claims

1. Method for calling (preparing, sending, receiving) user-specified information by means of a mobile telephone, comprising the following steps

a) preparing a query profile, where in the query profile at least one information requirement is specified and a brief command attached to it, where the brief command can be produced using the keypad of a mobile telephone,

b) sending the query profile in accordance with step a) to an information supplier

c) sending an information call by means of a mobile telephone to the information supplier containing at least the brief command

d) comparing the brief command in accordance with step c) with the brief command of the information requirement of the query profile in accordance with step b)

e) putting together the information of the specified information requirement in the event of agreement in accordance with step d)

f) sending the collected information to the mobile telephone

g) reproducing the information by way of the mobile telephone.

2. Method in accordance with Claim 1 characterized in that step a) takes place via a data-processing system and step b) via a data link between the data-processing system of the user of the mobile telephone and the data-processing system of the information supplier.

3. Method in accordance with Claim 1 characterised in that the query profile is produced by a speech computer.

4. Method in accordance with Claims 1 to 3 characterized in that the information call is sent with a PIN, where the PIN establishes entitlement to call up the specified information.

5. Method in accordance with Claims 1 to 4 characterised in that the information call is sent with the telephone number of the caller, where the telephone number establishes entitlement to call for the information.

6. Method in accordance with Claim 1 or 2 characterized in that the data link is effected through a modem to the data-processing system of the information supplier.

7. Method in accordance with Claims 1 to 4 characterized in that the data link is effected through the Internet to the data processing system of the information supplier.

8. Method in accordance with Claims 1,2,4,5 or 7 comprising the further step:

Downloading JAVA applets, stored on the server of the information supplier through the Internet to the data processing system of the user of the mobile telephone;  
Preparing the query profile in accordance with step a) by means of the JAVA applets.

9. Method in accordance with Claims 1 to 8 characterised in that step c) is effected through the SMS of the mobile telephone.

10. Method in accordance with Claims 1 to 9 characterized in that steps d) - f) are each effected through one of the information supplier's programs.

11. Method in accordance with Claims 1 to 9 characterized in that steps d) - e) and step f) are each effected through separate information supplier programs.

12. Method in accordance with Claims 1 to 11 characterized in that sending, in accordance with step f), is effected via a mobile telephone.

13. Method in accordance with Claims 1 to 11 characterized in that sending in accordance with step f) is effected first via a data link to the mobile radio network operator and then via the telephone network to the user of the mobile telephone.

14. Method in accordance with Claims 1 to 13 characterized in that the information, in accordance with step g), is supplied visually or acoustically via the mobile telephone.

15. Method for producing a user-specified information requirement which can be accessed via SMS messages of a mobile telephone, comprising the following steps:

a) preparing a query profile, where in the query profile at least one information requirement is specified and a brief command attached to it, where the brief command can be produced using the keypad of a mobile telephone,

b) sending the query profile in accordance with step a) to an information supplier

c) storing the query profile at the information provider on a data-processing system which can communicate with the telephone network of the mobile telephone.

16. Method in accordance with Claim 15 characterised in that step a) is effected via a data-processing system and that step b) is effected over a data link between the data-processing system of the user of the mobile telephone and the data-processing system of the information provider.

17. Method in accordance with Claim 15 characterised in that the query profile is produced via a speech computer of the information provider.

18. Method in accordance with Claims 15 to 17 characterized in that the call for information is sent with a PIN where the PIN establishes the entitlement to call for the specified information.

19. Method in accordance with Claims 15 to 18 characterized in that the call for information is sent with the telephone number of the caller, where the telephone number establishes the entitlement to call for the information.

20. Method in accordance with Claim 15 characterized in that the data link is effected through a modem to the data processing system of the information provider.

21. Method in accordance with Claim 15 characterized in that the data link is effected through the Internet to the data processing system of the information provider.

22. Method in accordance with Claims 15, 16, 18, 19 or 21 comprising the further step:

Downloading JAVA applets, stored on the server of the information supplier through the Internet to the data processing system of the user of the mobile telephone.

23. Method for calling up information via a mobile telephone where a query profile is deposited with the information provider, where the query profile specifies at least one information requirement and to which a brief command is attached for its identification, comprising the following steps:

a) sending a call for information by means of the mobile telephone to the information provider containing at least the brief command

b) comparing the brief command in accordance with step a) with the brief command of the information requirement of the query profile

c) putting together the desired information of the information requirement in the event of agreement in accordance with step b)

d) sending the collected information to the mobile telephone

e) reproducing the information via the mobile telephone.

24. Method in accordance with Claim 23 characterised in that step a) is effected via SMS of the mobile telephone.

25. Method in accordance with Claim 23 characterised in that steps b) - d) are effected through a program of the information provider.

26. Method in accordance with Claim 23 characterised in that steps b) - c) and step d) are each effected through separate programs of the information supplier.

27. Method in accordance with Claims 23 to 26 characterised in that the transmission in accordance with step d) is effected via a mobile telephone.

28. Method in accordance with Claims 23 to 26 characterised in that the transmission in accordance with step d) is effected first via a data link to the mobile radio network operator and then via the telephone network to the user of the mobile telephone.

29. Method in accordance with Claims 23 to 28 characterised in that the information in accordance with step e) is effected either visually or acoustically via the mobile telephone.

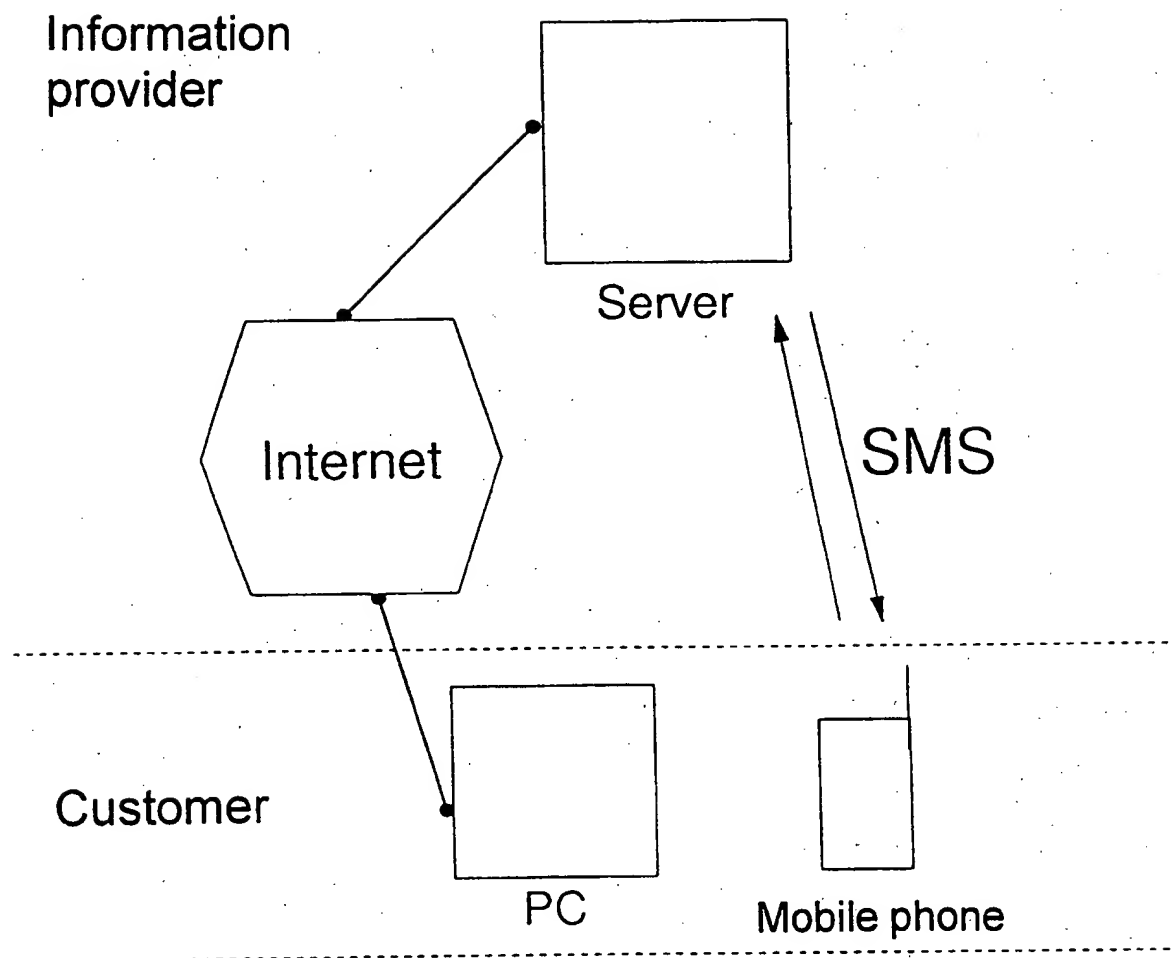


Fig. 1

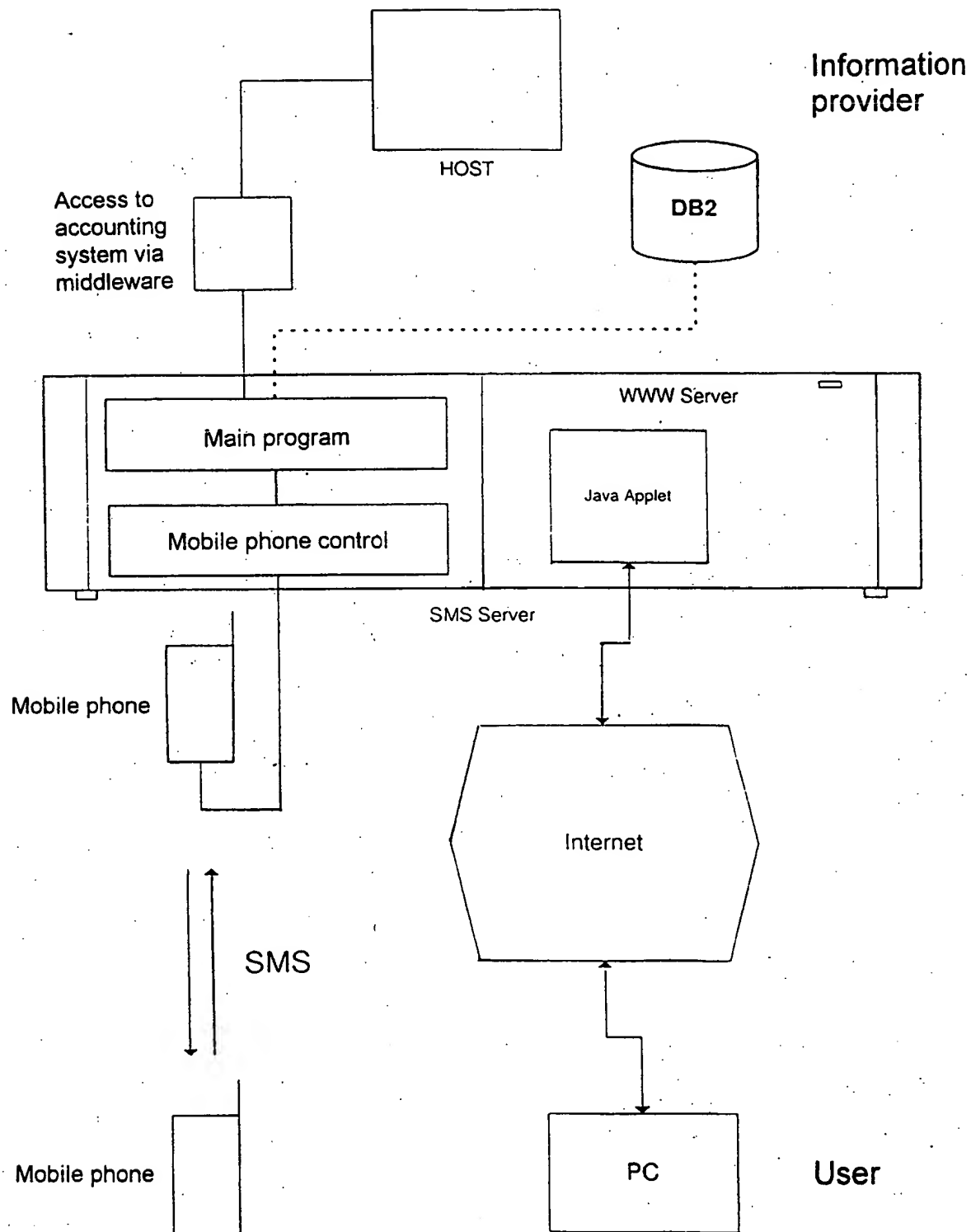


Fig. 2